

A2 Balanced diet

Getting the balance right

Your body needs nutrients for energy and to keep it working properly so you stay fit and healthy. A diet that has the right amounts of all the nutrients is called a **balanced diet**. A balanced diet can be different for different people. The foods which can make it up can be different.

How much should we eat?

Government scientists advise us how much of each nutrient we should eat a day. They set **recommended daily intakes (RDI)** or **recommended daily allowances (RDA)** for some of the nutrients and energy that make up a balanced diet.

The table below shows some RDAs for different people.

Person (age in years)	Energy in kJ	Protein in g	Vitamin C in mg	Iron in mg
male 10–12	10900	30	20	5–10
female 10–12	9800	29	20	5–10
adult male	12600	37	30	5–9
adult female	9200	29	30	14–28

- a** Describe any differences between:
- (i) males and females (ii) children and adults.
- b** (i) What differences can you see in the RDAs for iron?
(ii) Can you explain this?

Balancing the energy

The amount of energy you need in your food depends on how much energy your body uses up every day. This depends on whether you are growing, how active you are and the size of your body. Men need more energy than women.

A teenage boy uses about 12 200 kJ of energy every day, while a girl of the same age uses about 9600 kJ. A person doing a very active job such as a builder uses a lot more energy than an office worker of the same age and sex.

Sports people use a lot of energy and they need to take in energy very quickly. They often have drinks that contain a lot of sugar such as glucose that can be used for energy very quickly.



Do you remember?

Food is the energy source for animals. We measure the energy value of food in kilojoules (kJ).



It is important to take in the right amount of energy in your food. Some people take in more energy than they use up. They risk becoming fat. People who are very overweight for their height are described as **obese**.

Obese people may eat less in order to lose weight. You should always speak to your doctor before going on a diet. Sometimes people can suffer from eating disorders such as **anorexia nervosa**. They do not eat enough and they become very underweight. This disease can kill.

Diet in pregnancy

Pregnant women are advised to supplement their diet with folic acid. This helps prevent certain kinds of disability in the baby. Women also need extra nutrients in the last three months of pregnancy. They may take extra calcium for the growing bones of the fetus, protein for its muscles and cells and iron for its blood.

C What do you think 'supplement' means?

Different diets



Vegetarians do not eat any meat. To give them the protein they need in a balanced diet they eat nuts, seeds and cereals. Balanced vegetarian diets can be very healthy as they contain less fat and more fibre than a diet including meat.

People from different cultures eat different foods. This may be due to religion, tradition or simply what is available in the country. In many Asian countries, such as China, India and Pakistan, the main food is rice. In some countries in Africa the main food is maize.

In developed countries, such as the UK, the diet often contains too much fat and salt. A person who eats a high-fat diet is more likely to have a heart attack. A diet high in salt can increase the risk of having strokes. This kind of diet is often termed the 'Western diet'.

We also eat too little fresh fruit and vegetables. Government scientists encourage us to eat five portions of fruit or vegetables a day to keep healthy.

Did you know?

Twenty per cent of the population of the UK are officially considered to be obese.



Questions

- Jake is a vegetarian. His friend Zoe enjoys eating burgers and chips. Jake thinks that his diet is probably more healthy than Zoe's. Explain why he may be correct.
- There are no RDIs or RDAs for carbohydrate or fat in Western countries.
 - Why do you think this is the case?
 - Why are carbohydrates and fats important for the diet?
- Decide whether you think each of these statements is true or false. Explain your decisions.
 - An office worker uses less energy than a builder.
 - Vegetarians are at risk of eating too little roughage.
 - Athletes need lots of glucose when they compete.

For your notes:

- A diet that has the right amount of each nutrient is called a **balanced diet**.
- It is important to balance the energy in your food with the energy your body uses.

- Salt, sugar, fat
- Organic food

Breakfast on the move

Have you ever missed breakfast and had a cereal bar on the way to school instead? Cereal bars are advertised as the modern alternative to breakfast. They contain lots of nutrients including vitamins and fibre and they are easy to eat on the move – particularly useful if you are running late!

But some experts in healthy eating are worried that cereal bars are loaded with salt, sugar and fats.

a Why are cereal bars a popular alternative to breakfast?

A salty taste?

The average person takes in 9 g of salt each day, but some scientists recommend that we should reduce this to 6 g. They think that too much salt in the diet can cause high blood pressure, which can increase the risk of heart disease and strokes.

Other scientists disagree. They say that although cutting down your salt intake reduces high blood pressure, this does not mean that too much salt raises your blood pressure.

A sweet tooth?

When we eat sugary food, microorganisms called bacteria on our teeth feed on the sugar. This produces the acid that causes tooth decay.

Too much fat?

Eating too much fat, especially animal fats, can increase the risk of heart disease. A layer of fat can build up in your blood vessels. This makes the blood vessels narrower, slowing down blood flow, sometimes stopping it. This is especially dangerous in the blood vessels:

- that take blood to the heart, where it causes a heart attack.
- that take blood to the brain, where it causes a stroke.

NUTRITIONAL INFORMATION

100 g provides:

Energy 1900 kJ/450 kcal.

Protein 9 g.

Carbohydrates 67 g (of which are sugars 37 g, starch 30 g).

Fat 16 g (of which saturates 14 g).

Fibre 1.6 g.

Salt 1.6 g.

Vitamins: Thiamine (B₁) 0.9 mg (65%). Riboflavin (B₂) 1.0 mg (65%).

Niacin 11.3 mg (65%). Vitamin B₆ 1.3 mg (65%). Folic acid 125 µg (65%).

Minerals: Calcium 720 mg (90%). Iron 8.8 mg (65%).

(%) = % Recommended Daily Allowance

One Cerius bar weighs 25 g.



Did you know?

The sugar in a cereal bar is more likely to stick to your teeth and cause tooth decay than the sugar in a bowl of breakfast cereal with milk. The milk washes the sugar away from your teeth!

Some food labels tell you how much sodium is in 100 g of the food, instead of how much salt. This can be misleading because sodium and salt are not the same thing. Salt is sodium chloride. You have to multiply the amount of sodium by 2.5 to find out the actual salt content. Experts are asking for clearer labelling that says how much salt there is in 100 g of the food, as on the Cerius Bar label shown on the left.

b Look at the Cerius bar label. Do you think it is a healthy or unhealthy breakfast? Use the ingredients to justify your argument.

Time for lunch ...

Jordan decided to have baked beans on toast.

But baked beans, like most processed foods, have added sugar and salt. The salt is added to give flavour and to improve the shelf life.

Bread also has added salt. Four slices of bread contain 2g of added salt – that's one-third of the recommended daily intake.

Jordan also had a thick layer of butter on his toast.

- c** Explain why beans on toast might not have been the healthy choice.

Organic food – the good and the bad

During the meal, Hayley began to wonder whether her salad was made with **organic** vegetables. The word 'organic' is used to describe food that has been grown without using manufactured chemicals. Natural fertilisers such as manure are used and the crops are not sprayed with chemicals to kill pests.

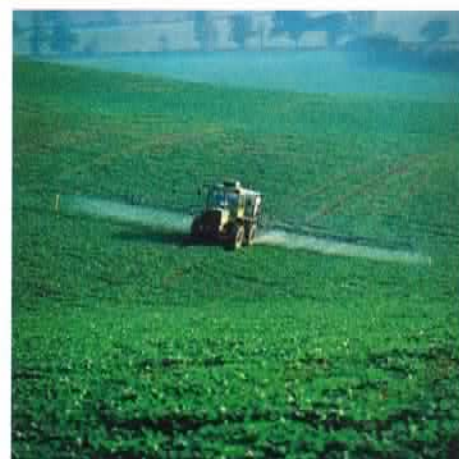
More and more people are buying organic vegetables because it is better for the environment not to spray them with chemicals. Some people claim that organic vegetables are healthier because other vegetables might be contaminated with small amounts of manufactured chemicals.

If crops are not sprayed with chemicals, some of the crop may be spoiled by pests or damaged by diseases. This can make organic vegetables expensive to produce.

- d** Why do you think Hayley would have preferred her salad to be organic?



That's a very healthy choice. There's plenty of fibre and protein in the beans, and carbohydrate from the bread.



Organic farmers do not spray their crops with manufactured chemicals.

Did you know?

Non-organic farmers coat their fruits with wax to make them look nice. Organic farmers leave their food untreated so it often doesn't look as good as non-organic food.

Questions

- Many breakfast cereals contain more salt per 100g than a packet of crisps. Which do you think is the healthier snack? Explain your answer.
- Why is it a good idea to drink a glass of water with a sugary snack?
- What foods should you eat to reduce your chances of getting heart disease?
- What is different about organic vegetables?
 - Some people claim they are healthier than other vegetables. What do you think?

For your notes:

- Processed foods often contain a lot of salt and sugar.
- You need to look at foods very carefully to decide whether they are healthy or not.
- Organic** foods are produced without using manufactured chemicals.